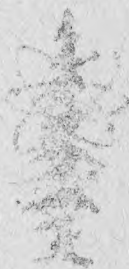


This image shows a page from a manuscript, likely a historical astronomical or celestial work. The page is filled with a grid of small, circular diagrams, possibly representing celestial bodies or astronomical observations. The diagrams are arranged in rows and columns, with some text and numbers interspersed. The text is written in a historical script, possibly Arabic or Persian, and the numbers are in the right margin. The diagrams are small and circular, with some internal markings that could represent celestial features or mathematical data. The overall layout is organized and systematic, typical of a scientific or astronomical manuscript.



AMATEUR RADIO
STATION W60TX

VOL. XVII

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PALO ALTO AMATEUR RADIO ASSOCIATION, INC.

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PAARAGRAPHS is the official organ of the Palo Alto Amateur Radio Association, Inc., and the Menlo Park Civil Defense Radio Club.

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SUBSCRIPTIONS AND DUES

- 1) Membership dues in PAARA (only) include a subscription to PAARAGRAPHS. (Need I say more??)
- 2) Annual dues are only \$4.00.
- 3) Members will be dropped from our mailing list when their dues expire -- dues are on a calendar year basis.
- 4) Subscription to this illustrious journal is \$1.00 a year -- that's less than 9¢ an issue!

Non-subscribers will be dropped from our mailing list as new names are added.

SEND ALL CASH, CHECKS, LOOT MONEY AND \$\$\$\$ TO:

PAARA, P.O. Box 911, Menlo Park 94025

ARTICLES GLADLY ACCEPTED -- WRITE ABOUT ANYTHING ! ! !
(well, Almost Anything.....)

SEND TO: Rick Ferranti
1234 Santa Cruz Ave.
Menlo Park, CA 94025
415-324-1539

-OR-

Gary Perazzo
1044 Berkeley Ave.
Menlo Park, CA 94025
415-323-5307

PAARA PICKIN'S -- ANNOUNCEMENTS AND SUCH

OUR NEXT MEETING: Friday, November 2, 7:30 PM In the Menlo Park Recreation Center behind the City Hall.

TOPIC: Frank Miller, WA6BTH, will give a presentation on the San Mateo County RACES Repeater system K6QFO. Slides will be shown of the hill tops.

COME JOIN IN -- Coffee Donuts Lots-a-fun...

OUR NEXT BOARD OF DIRECTORS MEETING: Will be in the trailer at SRI at 7:30 PM, November, 7, the Wednesday following our regular meeting. All interested are invited to attend.

The PAARA NET -- Meets every Monday night at 8:15 PM, on 145.24 MHz. Hear ye, hear ye, all pervayers of Ancient Modulation. Monday night is your night to be the admiration of your fellow rag chewers. Join in on the PAARA Net...

OTHER MONDAY NIGHT NETS:

W6WWJ	Redwood City DD	7:30 PM	145.49 AM
W6ASH	SPECS	7:45	146.00 AM
K6EO	San Mateo County CD	8:00	145.49 AM
K6EO	San Mateo County CL	8:05	146.25/85 FM

GREEN AND GRAY GORILLA NET : As you swing from your Banana Tree, grab the mic with your left foot and squawk on the Green and Gray Gorilla net every Sunday night at 10:26PM on 146.25/85, FRIENDLY Modulation

PAARA Board Meeting Minutes, October 10, 1973 de W6LEF.

Meeting called to order at 1935 with Fred Canham, K6YT, Les Vickery, W6AKR, Vance Wardlow, W6FLE, and Hal Moore, W6DEF, present. Visitor was Gary Perazzo, K6LVJ, reporter for PAARAGRAPHS.

Minutes of Board meeting September 12 read and approved. Treasurer's report read. Announcement that the Auction/Rummage Sale brought in \$354.50.

Report by Les Vickery and the nominating committee was:

Paul Churchill W6QBY for Treasurer.

Hal Moore W6DEF for Secretary.

Michael Eccles G3PPE/W6 Vice President.

Fred Canham K6YT President.

Board of Directors:

Terry Conboy, WB6GRZ, and Hal Moore, W6DEF.

Property Custodian and Trustee for the Menlo Park CD Club:

Ed Fairbanks, W6AIN.

Ass't Property Custodian, Steve Montoya WN6DQT.

For Vice President, Bob Baum, W6BFH.

Discussion: Auction/Rummage sale and effort to improve on it. Secretary instructed to write letters of thanks to The Ampex Corp, Public Relations Dept. 401 Broadway, Redwood City, Cement Co. of San Jose and Radio Shack of Palo Alto.

Discussion: Christmas Party. Motion made and approved that \$35.00 be sent to the San Carlos Club as our share in the expense of the Christmas Party which they will sponsor.

Meeting closed at about 2135 PDT.

Hal Moore, W6DEF, Secretary.

JOIN IN THE FUN **** JOIN PAARA ***

1973 Pacific Division ARRL Convention BIG Success
(at least for W6DEF)

The 1973 Pacific Division ARRL Convention held at the Dread Inn (on the beach) in Santa Cruz was a grand and glorious success. Wonderful weather too. Several PAARA members were present to join in the activities. Congratulations to Hal Moore, W6DEF for winning a Sure Brothers Model 444 microphone which, according to Hal, will make him sound better on the Weather Net on 75 meters.

There was a lot of fun meeting fellows that we havent seen or talked to on the air lately. Lot of wise cracks and good natured kidding at the banquet. (Good food too)

The technical sessions and talks were outstanding. Here's looking forward to more good Ham Fest Get-to-gethers.

FINAL OFFICIAL RESULTS OF FIELD DAY - FARS WINS PLACQUE!

(from CCRC CIRCLE) The Awards Committee has been able to arrive at a winner for the CCRC FD Plaque. At the last CCRC meeting the committee explained that the closeness of the scores, and some minor errors and discrepancies in reporting, had made it most difficult to pick a winner. However, after a lengthy discussion with the delegates, a basis was arrived at which allowed a decision to be made.

The committee calls the following their "noquible scores", and declares FARS the winner.

The formula used is as follows:

number of contacts power multiplier, divided by the square root of the number of transmitters, plus the bonus points.

#1 FARS (Foothill Amateur Radio Society)

1589 contacts x 2 (the power multiplier) divided by 2 (the square root of 4 transmitters), equals

1589 plus 550 bonus points, equals 2139 total points.

#2 San Carlos Amateur Radio Club.

1651 contacts x 2 divided by 2.236 (for 5 transmitters) equals 1477 plus 600 bonus points, equals 2077 total points.

#3 PAARA (Palo Alto Amateur Radio Association)

1395 contacts x 2 divided by 1.732 (3 transmitters) equals 1610, plus 400 bonus points, equals 2010 total points.

#4 Mt. Diablo Amateur Radio Club.

1476 contacts x 2, divided by 2.236 (5 transmitters), equals 1980 total points.

#5 SFARC (San Francisco Amateur Radio Club)

1419 contacts x 2 divided by 2.449 (6 transmitters), equals 1106 plus 650 bonus points equals 1756 total points.

Now, if San Carlos had eliminated the 2M transmitter and its contacts, they would have had a better score, and the contest would have been even closer--but they would still be in second place. The scoring would look like this:

1613 x 2 divided by 2 equals 1613 plus 500 bonus points equals 2113 total.

So again CONGRATULATIONS to the Foothill group.

(PAARA Editor's note) Considering the closeness of this year's contest, next year, with a little more effort, PAARA should be on TOP. GO GO GO...

QST QST QST

All those interested in learning the Morse Code, or getting your speed ready for the FCC exam, contact K6LVJ. (address and phone listed on page 2)

*** WIN PRIZES AT THE NEXT PAARA MEETING ***

PAARA AUCTION/RUMMAGE SALE -- BIG SUCCESS

Congratulations to all those who helped to make the PAARA auction and rummage sale a great success. While other auctions have appeared to be having less success this year, PAARA's seemed to improve over last year's. A very special thanks to Ampex for use of the spacious facilities.

Here are some observations by Les Vickery, W6AKR, on the auction:

The operation on October 5, 1973, at the Ampex Cafeteria, appeared to be well organized and conducted, from where I sat--at the incoming registration table.

This year the people attending filled out their names, calls, and addresses on a sign-in card. Then they were logged in on a registration form, assigned a buyer number and a free door prize ticket, starting with 101 (that is the same number for registration and door prize ticket). The last number issued was 295.

Auction sellers were issued numbers starting with 1 up to 100. Seller tickets numbers 5, 10, 15,...etc, were reserved for PAARA auction lots, so they would be dispersed among the sellers present. 29 seller numbers were issued.

This system was adopted so that the people at the accounting table needed only to record the price, the buyer and seller numbers for each item auctioned.

The "flea market" or "swap" tables were rented at \$3.50 each. One comment from one "flea marketeer" was that he sold \$70 worth, he expected to sell only about \$30 worth.

People started coming in to register at 6:30 PM, just as the registration table was set-up. The majority of people had registered by 9:30 PM, but there were additional people coming in up to 11:00. A number expected and offered to pay a \$1.00 admission fee, and seemed surprised and pleased that attendance was free. I recommend that sign-in cards be used again next auction.

KORSAK AND COMPANY CONQUER MT HAMILTON AS OSCAR FLIES BY
(An article written by ace reporter Shortie Wave
after an exclusive interview with Dr. Korsak.)

The morning was alive with the sounds of cheeping birds, the glistening sight of dew on the roses, and the oliferous aroma of chrysanthemums (mum's the word) in the air. Who would suspect that the conquest of Mt. Hamilton was going to transpire on this fine day?

Seven AM found a crew of busy PAARASITES (Hams who are PAARA members) preparing for their laborious sojourn. With the smell of defeat still fresh in their nostrils from last year, they departed with gusto.

Andy Korsak, VE3FZK/W6, forged on ahead in his camper. While Andy communicated with the other car on 145.24 AM, an accomplishment in itself, Paul Thekan monitored the 7230 kHz OSCAR 7 fly-by net. Mike Bach, WB6FFC, and his dad brought up the rear.

They did it. They actually reached the top of Mt. Hamilton (a normal accomplishment for most people). Now they could do what they had planned to do on last year's ill fated trip. The delicate scientific equipment was assembled. An army surplus generator, a homebrew two meter transmitter for driving a 432 mHz tripler (rigged for CW), an 11 element two meter beam, a 20 element 432 J-beam, and a colapsable portable 20 foot mast were set into operation. After careful tuning on the very sensative receiver, OSCAR 7 was heard.

According to Andy, "we heard OSCAR 7 package longer than anybody else because of our height (4000')."

The trip was almost completely without incident. However, one minor problem did occur. The spot selected to set up shop was adjacent to an observatory dormatory.

Astronomers work at night and sleep in the day. When the generator was fired off, there was some discontent among the natives (astronomers). Andy was able to talk his way out of it.

Here is the results of the test according to Andy.

"We heard lots of Bay Area stations on two meters and some Southern California stations even one on Mt. Wilson. We collected lots of scientific data on signal strengths of OSCAR 7. But, we failed to make it into the transponder for some reason. Either our two meter transmitter wasn't putting out, on the right frequency, or our converter was shot."

Congratulations ANDY and company for greater success this time...

WANTED: 1 High band (150 mHz) Public service receiver.
1 Low Band (30-50 mHz) " " "
Both of which xtal controlled but not the
scanner variety. Call Jim, WA6ABQ, 328-5529.

.WANTED: Clean operating two meter receiver strip.
preferably tuned to two meters already
such as Progress Line or Motorola A strip.
Must be narrow band. Call Tom WB6KQZ,
369-1585.

Pitch in!!! Send technical topics and general articles
for publication in PARAGRAPHS. See YOUR name in print.

***** TECHNICAL TOPICS *****

(Reprint from H.P.'s BENCH BRIEFS Vol. 13 Nr. 2

dB AND dBm WITHOUT LOGS (PART I)

by Dick Gasperini

The last issue contained a discussion (in Bench Briefs) of db and dBm that showed helpful manipulations, but this procedure required the use of logarithms. A great number of situations can be handled without logs by using a simple technique that requires remembering two key numbers.

For 3 db the key number is 2.

For 10 db the key number is 10.

A 3 db change means a power change of 2 to 1. A 3db increase corresponds to 2 times the original power; a 3 db decrease means $1/2$ the original power.

A 10 db change corresponds to a power change of 10 to 1. A 10 db increase means 10 times the original power; a 10 db decrease corresponds to $1/10$ times the reference power.

It is helpful to recall that additions in logs is equivalent to multiplying the power ratios. That is, a 6 db gain corresponds to a power ratio of 4 to 1, since 6 db can be broken down into two 3 db gains, each with a power ratio of 2. Multiplying 2 times 2 yields 4. A 20 db loss is a power ratio of $1/10$ times $1/10$ times $1/10$ since 20 db is the equivalent of two individual 10 db steps. A 30 db gain corresponds to a power ratio of $10 \times 10 \times 10 = 1000$.

This method makes logs easy to calculate.

The 3 db and 10 db key numbers can be combined to provide additional capability. For example, 13 db is the sum of 3 db and 10 db and can be expressed as a power ratio by multiplying the individual power ratios. This is 2×10 , or 20. To calculate 16 db (the sum of 3 db + 3 db + 10 db), multiply the individual power ratios of $2 \times 2 \times 10$ to obtain 40.

A gain and a loss can be combined easily also. For example, 7 db is the sum of +10 db and -3 db. This corresponds to a power ratio of $10 \times 1/2 = 5$, since the power ratio

of -3 db is $1/2$. We can also determine 4 db, which is the sum of +10 db -3 db and -3 db. The equivalent power ratio is $10 \times 1/2 \times 1/2 = 2.5$.

What power ratio is expressed by 43 db? This can be expressed as 10 db + 10 db + 10 db + 10 db + 10 db. The equivalent power ratio is:

$$10 \times 10 \times 10 \times 10 \times 2 = 20,000.$$

How about 44 db? This can be expressed as 10 db + 10 db + 10 db + 10 db + 10 db + (-3 db) + (-3 db). This is a power ratio of:

$$10 \times 10 \times 10 \times 10 \times 10 \times 1/2 \times 1/2 = 25,000.$$

Thus excellent range and resolution can be obtained with this method without calculating logarithms. If the exact db number cannot be reached, we can at least get an approximate power ratio.

For example, 8 db cannot be reached directly with combinations of 3 db and 10 db. But we know 7 db is a power ratio of 5 and 9 db is a power ratio of 8. Therefore, 9 db must be a power ratio between 5 and 8.

This technique can be reversed to convert a power ratio to db as long as the power ratio can be broken down into a product of 10 and 2. For example, a power ratio of 25 can be broken down to $10 \times 10 \times 1/2 \times 1/2$. This product corresponds to a sum of 10 db + 10 db - 3 db - 3 db = 14 db.

(part II next month)

For Sale Se Vende

ONE HALLIcrafters S-129 4-band receiver, .55 to 30mhz
High image rejection with 1650 kc IF, 80 -10 meter full-
width bandsread, product detector, very sensitive (1/2uv)
right up thru 10 meters. Original price, \$160, in mint cond.
WORKS GREAT! - \$50*

Call 324-1539 (on weekends) ask for Rick WA6NCX

OR

Call 296-9644 (room 204 McLaughlin Hall-during week)
(ask for Rick)

